

IN THE CLAIMS:

1 1. (Withdrawn) A fusion transcript consisting of a homologue cross-over between two
2 different genes with more than 80% sequence homology in certain regions, in particular regions
3 of cross-over.

1 2. (Withdrawn) A fusion transcript according to claim 1, wherein the two genes are the
2 genes of SCCA1 and SCCA2.

1 3. (Withdrawn) A full length fusion transcript protein between SCCA1 and SCCA2
2 having switched reactive site loops compared to basic promoter.

1 4. (Withdrawn) A substantially full length fusion transcript protein between SCCA1 and
2 SCCA2 having switched reactive site loops compared to basic promoter.

1 5. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 -
2 7 of SCCA1 gene fused to exon 8 of SCCA2 gene.

1 6. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA1
2 gene fused to exon 8 of SCCA2 gene.

1 7. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 -
2 7 of SCCA2 gene fused to exon 8 of SCCA1 gene.

1 8. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA2
2 gene fused to exon 8 of SCCA1 gene.

1 9. (Withdrawn) A fusion protein according to claim 5, wherein the protein sequence is

2 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
3 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLE FNKSTDAYE
4 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
5 VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF
6 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
7 IDGLQKLEEK LTAEKLMEWWT SLQNMRETCV DLHLPRFKME ESYDLKDTLR
8 TMGMVNIFNG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
9 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP

1 10. (Withdrawn) A DNA sequence sequence coding for a fusion SCCA1/SCCA2
2 protein.

1 11. (Withdrawn) A DNA sequence comprising the nucleotide sequence of exon 2 – 7 of
2 SCCA1 fused to the nucleotide sequence of exon 8 of SCCA2.

1 12. (Withdrawn) A DNA sequence according to claim 11, wherein the nucleotide
2 sequence is

3 ATGAATTCAC TCAGTGAAAGC CAACACCAAG TTCATGTTCG ACCTGTTCCA
4 ACAGTTCAGA AAATCAAAG AGAACAAACAT CTTCTATTCC CCTATCAGCA
5 TCACATCAGC ATTAGGGATG GTCCTCTTAG GAGCCAAAGA CAACACTGCA
6 CAACAGATT A AGAAGGTTCT TCACTTTGAT CAAGTCACAG AGAACACCAC
7 AGGAAAAGCT GCAACATATC ATGTTGATAG GTCAGGAAAT GTTCATCACC
8 AGTTTCAAAA GCTTCTGACT GAATTCAACA AATCCACTGA TGCAATATGAG
9 CTGAAGATCG CCAACAAGCT CTTCGGAGAA AAAACGTATC TATTITACCA
10 GGAATATTTA GATGCCATCA AGAAATTTA CCAGACCAGT GTGGAATCTG

11 TTGATTITGC AAATGCTCCA GAAGAAAGTC GAAAGAAGAT TAACTCCTGG
12 GTGGAAAGTC AAACGAATGA AAAAATTAAA AACCTAATT C TGAAGGTAA
13 TATTGGCAGC AATACCACAT TGGTTCTTGT GAACGCAATC TATTCAAAG
14 GGCAGTGGGA GAAGAAATT AATAAAGAAG ATACTAAAGA GGAAAAATIT
15 TGGCCAAACA AGAACATACATA CAAGTCCATA CAGATGATGA GGCAATACAC
16 ATCTTTTCAT TTTGCCCTCGC TGGAGGATGT ACAGGCCAAG GTCCTGGAAA
17 TACCATACAA AGGCAAAGAT CTAAGCATGA TTGTGTTGCT GCCAAATGAA
18 ATCGATGGTC TCCAGAAG CT TGAAGAGAAA CTCACTGCTG AGAAATTGAT
19 GGAATGGACA AGTTTGAGA ATATGAGAGA GACATGTGTC GATTACACT
20 TACCTCGGTT CAAAATGGAA GAGAGCTATG ACCTCAAGGA CACGTTGAGA
21 ACCATGGGAA TGGTGAATAT CTTCAATGGG GATGCAGACC TCTCAGGCAT
22 GACCTGGAGC CACGGTCTCT CAGTATCTAA AGTCCTACAC AAGGCCTTG
23 TGGAGGTAC TGAGGAGGGA GTGGAAGCTG CAGCTGCCAC CGCTGTAGTA
24 GTAGTCGAAT TATCATCTCC TTCAACTAAT GAAGAGTTCT GTTGTAAATCA
25 CCCTTCCTA TTCTTCATAA GGCAAATAA GACCAACAGC ATCCTCTCT
26 ATGGCAGATT CTCATCCCCA

1 13. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or
2 more of exons 2 - 7 of SCCA1 gene fused to exon 8 of SCCA2 gene.

1 14. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons
2 2 - 7 of SCCA1 fused to the nucleotide sequence of exon 8 of SCCA2.

1 15. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or
2 more of exons 2 – 7 of SCCA2 gene fused to exon 8 of SCCA1 gene.

1 16. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons
2 2 - 7 of SCCA2r gene fused to exon 8 of SCCA1 gene.

1 17. (Withdrawn) A plasmid according to claim 13, comprising the nucleotide sequence:
2 of claim 12 ATGAATTCAC TCAGTGAAGC CAACACCAAG TTCATGTTCG
3 ACCTGTTCCA ACAGTTCAGA AAATCAAAAG AGAACAAACAT CTTCTATTCC
4 CCTATCAGCA TCACATCAGC ATTAGGGATG GTCCTCTTAG GAGCCAAAGA
5 CAACACTGCA CAACAGATTAGA AGAAGGTTCT TCACTTTGAT CAAGTCACAG
6 AGAACACCAC AGGAAAAGCT GCAACATATC ATGTTGATAG GTCAGGAAAT
7 GTTCATCACC AGTTCAAAA GCTTCTGACT GAATTCAACA AATCCACTGA
8 TGCAATATGAG CTGAAGATCG CCAACAAGCT CTTCGGAGAA AAAACGTATC
9 TATTTTACA GGAATATTCA GATGCCATCA AGAAATTCTTA CCAGACCAGT
10 GTGGAATCTG TTGATTTTGC AAATGCTCCA GAAGAAAGTC GAAAGAAAGAT
11 TAACTCCTGG GTGGAAAGTC AAACGAATGA AAAAATTAAA AACCTAATTG
12 CTGAAGGTAA TATTGGCAGC AATACCACAT TGTTCTTGT GAACGCAATC
13 TATTTCAAAG GGCAGTGGGA GAAGAAATT AATAAAGAAG ATACTAAAGA
14 GGAAAAATT TGGCCAACA AGAATACATA CAAGTCCATA CAGATGATGA
15 GGCAATACAC ATCTTTCAT TTTGCCTCGC TGGAGGTATGT ACAGGCCAAG
16 GTCCTGGAAA TACCATAACAGGCAAAGAT CTAAGCATGA TTGTGTTGCT
17 GCCAAATGAA ATCGATGGTC TCCAGAAG CT TGAAGAGAAA CTCACTGCTG
18 AGAAATTGAT GGAATGGACA AGTTTGCAGA ATATGAGAGA GACATGTGTC
19 GATTACACT TACCTCGGTT CAAAATGGAA GAGAGCTATG ACCTCAAGGA
20 CACGTTGAGA ACCATGGAA TGGTGAATAT CTTCAATGGG GATGCAGACC

21 TCTCAGGCAT GACCTGGAGC CACGGTCTCT CAGTATCTAA AGTCCTACAC
22 AAGGCCTTTG TGGAGGTCAC TGAGGAGGGA GTGGAAGCTG CAGCTGCCAC
23 CGCTGTAGTA GTAGTCGAAT TATCATCTCC TTCAACTAAT GAAGAGTTCT
24 GTTGTAATCA CCCTTCCTA TTCTTCATAA GGCAAAATAA GACCAACAGC
25 ATCCTCTTCT ATGGCAGATT CTCATCCCCA, and deposited at ECACC under deposition
26 number ECACC 01031315.

1 18. (Withdrawn) A protein expression system for production of SCCAI/SCCA2 fusion
2 protein.

1 19. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 13.

1 20. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 14.

1 21. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 13.

1 22. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 14.

1 23. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.

1 24. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.

1 25. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a Southern blot-technology applied on tumor DNA.

1 26. (Withdrawn) A method for detecting the gene rearrangement forming the

2 SCCA2/SCCA1 fusion protein using a Southern blot-technology applied on tumor DNA.

1 27. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a PCR-analysis technology.

1 28. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using a PCR-analysis technology.

1 29. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using an amino acid sequencing technology.

1 30. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using an amino acid sequencing technology.

1 31. (Canceled)

1 32. (Withdrawn) A method for detection the SCCA2/AI fusion protein using Western
2 blotting.

1 33. (Withdrawn) A monoclonal antibody specific for SCCAI/SCCA2 fusion protein.

1 34. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCAZ fusion protein.

1 35. (Withdrawn) A polyclonal antibody reactive with SCCAI/SCCA2 fusion protein.

1 36. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCA1 fusion protein.

1 37. (Canceled)

1 38. (Withdrawn) An immunoassay using a monoclonal antibody or polyclonal antibody
2 specific for SCCA2/SCCA1 fusion protein for detecting the presence and concentration of
3 SCCA2/SCCA1 fusion protein.

1 39. (Currently Amended) A method for diagnosing the presence or absence of a
2 squamous cell carcinoma by detecting the presence and concentration of the SCCA1/SCCA2
3 fusion protein in a human sample using a monoclonal antibody specific for the SCCA1/SCCA2
4 fusion protein only, said monoclonal antibody having no affinity for SCCA1 or SCCA2, and
5 wherein the SCCA1/SCCA2 fusion protein is coded by the exons 2-7 of the SCCA1 gene fused
6 to exon 8 of the SCCA2 gene the amino acid sequence of the SCCA1/SCCA2 fusion protein
7 being:

8 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDN
9 TAA
10 QQIKKVVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLE FNKSTDAYE
11 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
12 VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF
13 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
14 IDGLQKLEEK LTAEKLMEWT SLQNMRETCV DLHLPRFKME ESYDLKDTLR
15 TMGMVNIFNG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAATAVV
16 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP (SEQ ID NO: 1).

1 40. (Withdrawn) A method for diagnosing the presence or absence of a squamous cell
2 carcinoma by detecting the SCCA2/SCCA1 fusion protein in a human sample.

1 41. (Canceled)

1 42. (Withdrawn) A kit comprising a SCCA1/SCCA2 fusion protein antibody to be used in the
2 determination of the presence or absence of squamous cell carcinoma (SCC).

1 43. (Withdrawn) A kit comprising a SCCA2/SCCA1 fusion protein antibody to be used
2 in the determination of the presence or absence of squamous cell carcinoma (SCC).

1 44. (Withdrawn) A kit according to claim 42, in that it further comprises antibodies
2 related to SCCA1 and/or SCCA2.

45-50. (Canceled)